Amendments to the Specification:

On page 1, after the title, insert the following:

CROSS-REFERENCE TO RELATED APPLICATION

This application is the U.S. national phase of PCT Appln. No. PCT/EP2004/009318 filed August 19, 2004, which claims priority to German application 103 39 676.4 filed August 28, 2003.

BACKGROUND OF THE INVENTION

1. Field of the Invention

On page 1, before the paragraph beginning on line 5, please add the following:

2. Description of the Related Art

Please amend the paragraph beginning on page 1, at line 16, as shown below:

In principle, amorphous porous open-pored shaped SiO_2 bodies can be produced by compressing appropriate SiO_2 powders, or by a wet chemical process. In the methods known from ceramics for the compression of powders, for example cold or hot isostatic pressing methods, it is generally necessary to add binders of an organic type in order to obtain a stable shaped body. These binders need to be dissolved out or burnt off in a separate step. This is technically elaborate, expensive and leads to undesired contamination, which it is absolutely necessary to ~~avoid~~ avoid, particularly when producing crucibles for pulling silicon single crystals.

Please amend the paragraph beginning on page 1, at line 29 as shown below:

The preferred way of preparing porous shaped SiO_2 bodies is therefore the wet chemical procedure. Here, distinction is made between a so-called sol-gel route, in which the amorphous porous open-pored shaped SiO_2 body is produced by hydrolysis and condensation of organosilicon compounds in a ~~solvent,~~ solvent; a colloidal sol-gel route, in which SiO_2 particles are furthermore added to the ~~system,~~ system; and a so-called slip route, in which SiO_2 particles are dispersed in a solvent and subsequently shaped. The main disadvantage of the sol-gel route is the low resulting solids content in the shaped body. Specifically in the case of fairly large geometries, this leads to very severe cracking and fracture problems. In the colloidal sol-gel route, a high fill factor of the dispersion is achieved by the addition of SiO_2 particles, so that the resulting solids content in the shaped body is high. Such a method is described in EP 705797 and in EP 318100. Yet even here, the resulting solids contents are only between 40 and 60% by weight, so that the problem of cracking and fracture is not resolved.

On page 3, beginning at line 13 please delete the three paragraphs as shown below:

~~It was therefore an object of the present invention to provide an amorphous porous open-pored shaped SiO2 body with improved crack formation behavior.~~

~~It was another object of the present invention to provide a method for the production of the amorphous porous open-pored shaped SiO2 body according to the invention.~~

~~The first object is achieved by an amorphous porous open-pored shaped SiO2 body, which consists of two layers and wherein the layers have an identical structure and composition.~~

On page 3, after line 12, please insert the following:

SUMMARY OF THE INVENTION

It was therefore an object of the present invention to provide for an amorphous porous open-pored shaped SiO_2 body with improved crack formation behavior, and to provide a method for the production of the amorphous porous open-pored shaped SiO_2 bodies. These and other objects have been achieved by providing an amorphous porous open-pored shaped SiO_2 body, which consists of two layers, wherein the layers have an identical structure and composition.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 shows the layer boundary on a fracture edge of a shaped SiO_2 body according to the invention.

FIGURE 2 shows a scanning electron microscopic image of the texture at the layer boundary in the shaped SiO_2 body according to the invention.

FIGURE 3 shows that cracks which occur in the shaped SiO_2 body according to the invention at the layer boundary.

FIGURE 4 shows a partially sintered shell. The boundary layer (texture) is still visible.

FIGURE 5 shows a cross section through a fully sintered shell. The boundary layer (texture) is no longer detectable.

FIGURE 6 shows the production of a shaped body in 14" crucible geometry (Fig. 5), as described in Examples 3 and 4.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please amend the paragraph beginning on page 3, at line 25, as shown below:

~~Such a~~ The shaped SiO_2 ~~body is~~ bodies of the present invention may be produced by pumping a dispersion containing SiO_2 particles into a pressure casting mold of a pressure casting machine, in which the dispersion is dehydrated via an inner porous plastic membrane and an outer porous plastic membrane to form the shaped SiO_2 body.

Please amend the paragraph beginning on page 3, at line 31 as shown below:

In this case, the dispersion preferably has a fill factor of amorphous SiO_2 particles between 10 and 80% by weight, preferably between 50 and 80% by weight, and ~~particularly~~ most preferably between 65 and 75% by weight.

Please amend the paragraph beginning on page 3, at line 36 as shown below:

Polar or nonpolar organic solvents, for example alcohols, ethers, esters, organic acids, saturated or unsaturated hydrocarbons, or water or mixtures thereof may be used as the dispersant. Alcohols such as methanol, ethanol, propanol, or acetone or water and mixtures thereof are preferably used. Acetone and water or mixtures thereof are more preferred, and water is most preferred.

Please delete the paragraph beginning on page 4, at line 1, as shown below:

~~Alcohols such as methanol, ethanol, propanol, or acetone or water and mixtures thereof are preferably used. Acetone and water or mixtures thereof are particularly preferably used, and water is more particularly preferably used.~~

Please amend the paragraph beginning on page 4, at line 6, as shown below:

The dispersants described above are ~~particularly~~ most preferably used in a highly pure form, a form in which they may be obtained by methods known from the literature, for example, or are commercially available.

Please amend the paragraph beginning on page 4, at line 22, as shown below:

As an alternative[[, and]] which is likewise ~~preferably~~ preferable, a mineral base may be added to the water, for example NH_3, NaOH or KOH. NH_3 and NaOH are particularly preferred, and NH_3 is more particularly preferred. It is also possible to use mixtures of said compounds. A pH of 7 - 11, preferably 9 - 10, should then be ~~adjusted~~ established.

Please amend the paragraph beginning on page 4, at line 38 as shown below:

SiO_2 particles with ≤ 3 OH groups per nm^2 on their outer surface are preferred, ~~particularly~~ more preferably ≤ 2 OH groups per nm^2, and ~~more particularly~~ most preferably ≤ 1 OH groups per nm^2.

Please amend the paragraph beginning on page 5, at line 3 as shown below:

The SiO_2 particles should have a particle size distribution with a D50 value between 1 - 200 µm, preferably between 1 - 100 µm, ~~particularly~~ more preferably between 10 - 50 µm and ~~more particularly~~ most preferably between 10 - 30 µm. A particle distribution which is as narrow as possible is furthermore advantageous.

Please amend the paragraph beginning on page 5, at line 9 as shown below:

SiO_2 particles with a BET surface area of 0.001 m^2/g - 50 m^2/g are preferred, ~~particularly~~ more preferably 0.001 m^2/g - 5 m^2/g, ~~more particularly~~ most preferably 0.01 m^2/g - 0.5 m^2/g.

Please amend the paragraph beginning on page 6, at line 3 as shown below:

It is furthermore preferable to use amorphous SiO_2 particles with a different particle size distribution. Such amorphous SiO_2 particles are obtained by mixing SiO_2 particles, for example fused [[of]] or fumed silica with a particle size of 1 - 100 nm, preferably 10 to 50 nm, in an amount of from 1 to 50% by weight, ~~particularly~~ more preferably in an amount of from 1 to 30% by weight, ~~more particularly~~ and most preferably in an amount of from 1 to 10% by weight, with the aforementioned amorphous SiO_2 particles.

Please amend the paragraph beginning on page 6, at line 19 as shown below:

In a preferred embodiment, the particles described above are present in a highly pure form, that is to say with a proportion of atomic impurities, in particular metals $\leq$ 300 ppmw (parts per million by weight), preferably $\leq$ 100 ppmw, ~~particularly~~ more preferably $\leq$ 10 ppmw and ~~more particularly~~ most preferably $\leq$ 1 ppmw.

Please amend the paragraph beginning on page 7, at line 28 as shown below:

The filling may be carried out with any desired pressure, but preferably with pressures between 0.5 and 100 bar, ~~particularly~~ more preferably with pressures between 5 and 30 bar and ~~more particularly~~ most preferably between 5 and 10 bar.

Please amend the paragraph beginning on page 7, at line 33 as shown below:

The shell formation is preferably carried out at pressures between 0.5 and 100 bar, ~~particularly~~ more preferably with pressures between 5 and 30 and ~~more particularly~~ most preferably between 5 and 10 bar.

Please amend the paragraph beginning on page 7, at line 37 as shown below:

The shell thicknesses that are formed will be between 1 and 50 mm, preferably between 5 and 30 mm, depending on the intended body ~~shaped~~ shape [[body]].

Please amend the paragraph beginning on page 8, at line 15 as shown below:

The two pressure casting mold parts are held together with an appropriate closing pressure, so that filling and shell formation is possible at the pressures described above. Membranes which have an open porosity of between 5 and 60% by volume, preferably between 10 and 30% by volume, are preferably used as the porous membranes. The pore size of the membrane may be greater than, less than or equal to the size of the SiO_2 particles being used. It is preferable to use a membrane with a pore size of between 10 nanometers and 100 micrometers, ~~particularly~~ more preferably between 100 nanometers and 50 micrometers, ~~more particularly~~ most preferably between 100 nanometers and 30 micrometers.

Please amend the paragraph beginning on page 10, at line 15 as shown below:

In a preferred embodiment, in which all the steps are carried out using highly pure materials, the shaped body has a proportion of atomic impurities, in particular

metals, ≤ 300 ppmw, preferably ≤ 100 ppmw, ~~particularly~~ more preferably ≤ 10 ppmw and ~~more particularly~~ most preferably ≤ 1 ppmw.

Please amend the paragraph beginning on page 11, at line 27 as shown below:

In this way, it is possible to produce a 100% amorphous (no cristobalite) sintered shaped silica glass body which has a density of at least 2.15 g/cm^3, preferably 2.2 g/cm^3. In a particular embodiment, the sintered shaped silica glass body has no gas inclusions and preferably an OH group concentration ≤ 1 ppm. In a particular embodiment, in which all the steps are carried out using highly pure materials, the sintered shaped body has a proportion of atomic impurities, in particular metals, ≤ 300 ppmw, preferably ≤ 100 ppmw, ~~particularly~~ more preferably ≤ 10 ppmw and ~~more particularly~~ most preferably ≤ 1 ppmw. The shaped silica glass bodies produced in this way are suitable in particular for all applications in which silica glass is used. Preferred fields of application are quartz articles of any type, glass fibers, optical fibers and optical glasses. Highly pure silica glass crucibles for pulling silicon single crystals are a ~~particular~~ particularly preferred area of application.

Please delete the paragraphs beginning on page 12, at line 31 as shown below:

~~Fig. 1 shows the layer boundary on a fracture edge of a shaped SiO_2 body according to the invention.~~

~~Fig. 2 shows a scanning electron microscopic image of the texture at the layer boundary in the shaped SiO_2 body according to the invention.~~

~~Fig. 3 shows that cracks which occur in the shaped SiO_2 body according to the invention end at the layer boundary.~~

~~Fig. 4 shows a partially sintered shell. The boundary layer (texture) is still visible.~~

~~Fig. 5 shows a cross section through a fully sintered shell. The boundary layer (texture) is no longer detectable.~~

~~Fig. 6 shows the production of a shaped body in 14" crucible geometry (Fig. 5), as described in Examples 3 and 4.~~